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David B. Johnson, Rice University
David A. Maltz, Carnegie Mellon University
Yih-Chun Hu, Rice University

The Dynamic Source Routing Protocol
for Mobile Ad Hoc Networks (DSR)

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Abstract

The Dynamic Source Routing protocol (DSR) is a simple and efficient
routing protocol designed specifically for use in multi-hop wireless
ad hoc networks of mobile nodes. DSR allows the network to be
completely self-organizing and self-configuring, without the need
for any existing network infrastructure or administration. The
protocol is composed of the two main mechanisms of "Route Discovery"
and "Route Maintenance", which work together to allow nodes to
discover and maintain routes to arbitrary destinations in the ad hoc
network. All aspects of the protocol operate entirely on-demand,
allowing the routing packet overhead of DSR to scale automatically
to only that needed to react to changes in the routes currently in
use. The protocol allows multiple routes to any destination and
allows each sender to select and control the routes used in routing
its packets, for example for use in load balancing or for increased
robustness. Other advantages of the DSR protocol include easily
guaranteed loop-free routing, support for use in networks containing
unidirectional links, use of only "soft state" in routing, and very
rapid recovery when routes in the network change. The DSR protocol
is designed mainly for mobile ad hoc networks of up to about two
hundred nodes, and is designed to work well with even very high
rates of mobility. This document specifies the operation of the DSR
protocol for routing unicast IPv4 packets.